the results of some very interesting experiments with the prolonged use of digitalis on animals. He treated healthy dogs continuously for two years with gradually increasing doses of digitalis given subcutaneously. None of these dogs showed any cardiac hypertrophy or other anatomical or functional changes in the circulatory organs. His results showed that a functionally weak heart was not made strong, except during the period of taking the drug. The most interesting results were obtained in the animals in which he induced an acute endocarditis of the aortic valves and produced an aortic insufficiency. Some of these animals were then treated with digitalis, and after several months their hearts were compared with the control animals. These experiments seemed to indicate a decidedly beneficial influence from the use of digitalis upon the late results of an acute endocarditis. This influence was shown not only by the anatomical differences, but also by the functional capacity during life in the two sets of animals. The hearts of the digitalis animals were only 30 per cent. larger than normal, while in the untreated animals the hypertrophy was 80 per cent. above the normal. The fact that the lesion induced was an aortic insufficiency makes these results particularly interesting. Cloetta believes that the use of digitalis kept the hypertrophy within bounds and maintained the circulation in a more normal manner in the digitalis animals. It is needless to say there was no effect upon the valvular defect. Cloetta believes that in acute endocarditis the heart is apt to be irritable and does too much or too little work, that the good effects of the digitalis are due to its soothing and quieting action, and that there will result less dilatation and, in consequence, less subsequent hypertrophy. Several of the untreated animals died with dropsy in less than six months, while none of the treated animals showed any signs of heart trouble. From these results Cloetta is convinced that digitalis is bound to have a favorable effect upon recent endocarditis. He advises that since digitalis managed carefully is harmless, it should certainly be tried, and he believes that if this is done early, there will be less need of the drug in later years.

The Treatment of Arteriosclerosis.—SHEFFER (*Arch. gén. de méd.*, vi, 337) affirms that the generally accepted belief that arterial hypertension is the cause of the vascular lesions of arteriosclerosis cannot be considered absolute. He holds this belief because a marked arteriosclerosis may exist without hypertension. Danin found hypertension in 70 per cent. of his cases, Grödel in 65 per cent., and Strasburger in 46 per cent. Sheffer himself found hypertension in 60 per cent. Lancereaux, Hayem, and Chantemesse consider that hypertension is the result, and not the cause of arteriosclerosis. In either case the arteriosclerosis is due to the same causes, the injurious effect of poisons or toxins in the circulating blood. These poisons produce either vasoconstrictions or degenerative changes directly in the walls of the arteries. A necessary factor is an hereditary or individual predisposition. Sheffer believes that this predisposition consists of a defect in the metabolism of silicates. Gaube, Robin, and Binet have shown that the silicates are important in the economy. The quantity of silica in the muscles of an average man is about 6 gm., or twice as much as the amount of iron in the blood. Decene believes that the silicates prevent the deposition of lime salts. In the treatment of arteriosclerosis Sheffer advises the use of sodium silicate, which is a thick, syrupy liquid, with a disagreeable taste, and therefore should be given well diluted. The average daily dose is 1.5 to 3 grams. It may be employed for any length of time, although it is better to suspend its use from time to time. No digestive disturbances have been observed from its use; in fact, the digestive function seems to be improved. The arterial tension is lowered and remains at a constant and lower level after the drug has been used for from two to four weeks. The symptoms of cerebral arteriosclerosis, headache, and dizziness disappear very rapidly, and albuminuria diminishes or may entirely disappear. This result is also obtained in cases in which there is no increase of tension. A longer time is required to relieve dyspnœa or angina pectoris. In every case the general symptoms are improved and the patients feel stronger. The best results are obtained in the presclerotic stage. Sheffer also claims good results with this medication in the treatment of arthritis deformans.

The Treatment of Syphilis.—WECHSELMANN (*Fol. Therap.*, 1908, iv, 122) reviews the treatment of syphilis which has been placed on a more scientific basis by the discovery of Spirochæta pallida and by experimental investigation. Various investigations seem to prove that mercury acts directly upon the syphilitic virus. Neisser was able to diminish the eruption of the disease in apes inoculated with syphilis if mercury was introduced into the animal simultaneously with or soon after the inoculation. Atoxyl seems to act in the same way, but the doses required are frequently too large to be entirely safe. Moreover, atoxyl is not nearly so efficacious as mercury, and the effect of atoxyl on the late stages of syphilis is still unknown. Iodine appears to act on the tissues as an absorbing agent and only slightly on the syphilitic virus. Since spirochetes have been found in gummas and the infectious nature of these gummas has been established, the use of mercury in the tertiary stage of syphilis is justified. Wechselmann believes that the internal administration of soluble salts of mercury is weak in action, while the injection of insoluble salts has a much more energetic healing effect. However, the injection treatment frequently causes severe toxic symptoms and sometimes fatal results. He believes that the inunction method is just as potent and less dangerous. When the inunction method is inapplicable, the injection treatment is indicated. For this purpose mercury salicylate and thymolacet are the most suitable salts. The average dose is 0.1 gram every eighth day. Gray oil acts more energetically, but is more painful and has a greater tendency to toxicity. It should be used only in the rarer cases which resist ordinary treatment. Sterilized paraffin oil, olive oil, or vasenol may be employed as vehicles to convey the mercury. The injections should be made into the upper and outer quadrant of the buttock, where the veins are few in number. The injection of soluble salts is only suitable for the milder cases or for intermittent treatment. They are apt to be more painful. He recommends for internal medication mercurous tannate (0.1 gram thrice daily in pill form) or yellow mercurous iodide (0.01 to 0.02 gram thrice daily in pill form). Mergal in doses of three to six capsules daily is also valuable. Mergal is mercury cholate with tannin albuminate, and seems to cause no colic or renal irritation even when given for a prolonged period. Its action is mild and should be used when vigorous treatment does not appear essential. In those malignant cases of syphilis which tend to cause rapidly destructive lesions and resist ordinary treatment, Wechselmann believes that calomel is the best remedy. It should be injected in doses of 0.1 gram, and the risk of poisoning must be assumed. In some isolated cases, the use of atoxyl has increased the patient's strength and weight so that he could tolerate a course of mercury treatment. Wechselmann says that a rapid method for securing the action of iodine is by the injection of iodopin. For several days 10 to 20 grams of warmed 25 per cent. iodopin solution is injected under the skin of the back or buttock.

The Use of Arsacetin in the Treatment of Syphilis.—Neisser (*Deut. med. Woch.*, 1908, xxxv) believes that none of the newer remedies will replace mercury in the treatment of syphilis, but that they will often be of value to supplement the action of mercury or they may be used when mercury is not tolerated. He speaks of both the curative and prophylactic use of atoxyl, and then proceeds concerning the new arsenical preparation arsacetin introduced by Ehrlich. He believes that, of the two, arsacetin is much less apt to cause toxic symptoms and that the curative effects seem to be greater. The solution does not decompose, and can be sterilized. The initial dose should be 0.05 to 0.1 gram, which is gradually increased. Degenerative changes of the heart or kidney increase the liability to the production of toxic symptoms. In general arsacetin should not be given when there is myocarditis, and if the kidneys are insufficient, the urine must be frequently examined and the drug stopped if there are signs of kidney irritation. Some cases of kidney disease (possibly when due to the syphilitic virus) are benefited by its use. Neisser thinks that the treatment should be begun as soon as the diagnosis is made, either by finding the spirochetes or by the serum reaction. He believes that a combination of the arsacetin and the mercurial treatment will secure the quickest and best results. Arsacetin (0.6 to 0.75 gram) is injected on two succeeding days, and after an interval of four days this double injection is repeated. The entire treatment takes ten weeks, and 12 to 14 grams of arsacetin are used in all. Neisser used a 10 to 15 per cent. solution, which caused neither infiltration nor abscess. Mercury was given by inunction or by injection of gray oil. In some cases he also gave arsacetin 0.12 gram a day by mouth, but thinks that this method and dosage have not been sufficiently established.

Active Immunization by Subcutaneous Injections of Living Typhoid Bacilli in Typhoid Fever.—Pescarolo and Quadrone (*Zentralbl. f. inn. Med.*, 1908, xl, 989) present a preliminary report of their results with the use of subcutaneous injections of living typhoid bacilli. Their conclusions are as follows: (1) In typhoid fever, bacteriotherapy has a real value chiefly because of a stimulating action on the production of immunizing substances in the blood. (2) It is entirely harmless and causes only transitory symptoms of a local or general reaction. (3) It is of especial value in cases of typhoid septicemia, when the symptoms of a general infection are the chief characteristics. (4) The injections should be made early but not before the bacteriological diagnosis is made. The bacteriological diagnosis is made by the blood culture method.

PEDIATRICS.

UNDER THE CHARGE OF

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The Treatment of Otitis Media Complicating Scarlet Fever and Measles.—E. P. FOWLER (*Amer. Jour. Obst.*, 1908, lviii, 530) states that acute otitis media occurs probably in 20 per cent. of scarlet fever cases and in 5 per cent. of measles; the supervention of chronic suppurative otitis media he considers usually the result of neglect except in the tuberculous and other weak patients, in whom it may be chronic from the outset. Adenoids and tonsillar hypertrophy are a very important cause for the high percentage of cases of ear disease in measles and scarlatina; these conditions, therefore, should be corrected before children are taken with the exanthems. The preventive treatment is to care for the infections by keeping the room temperature at from 60° to 65°, the air moist so that the respiratory mucous membranes may not be irritated and the patient may not take cold in addition to the disease. Measles patients should be kept in bed for ten days, scarlet fever patients for twenty-eight days. To the neck should be applied a moist compress covered with rubber tissue. The mouth, nose, throat, and eyes should be kept clean, the nose being frequently cleaned of its secretions, one nostril at a time being compressed. The Politzer bag should be used gently, borovaselin for the coryza and sneezing, cocaine or weak adrenalin tampons for the catarrh. The throat should be swabbed regularly. These measures will prevent many ear and throat complications.

Should otitis develop, the bowels must at once be opened, diaphoresis produced, and the ear canal irrigated with either hot bichloride, boric acid or normal salt solutions, using two quarts of fluid every two hours; a suction ball instrument is the best instrument to use. As soon as pus is diagnosticated, an incision must be made through the tympanic membrane. Doubtful cases should always be incised after two to three days, also cases with slight bulging of the tympanic membrane with tenderness over the mastoid. In the presence of streptococci and mastoid tenderness, the mastoid should at once be opened to prevent meningeal involvement. Drainage must be resorted to and suction used at the dressings to bring all purulent matter to the surface.

Paralysis in Infancy due to Gastro-intestinal Intoxication.—H. LONGO (*Ann. de chir. et d'orth.*, 1908, xxi, 165) reports the case of a girl, aged four and one-half years, who had been twice paralyzed in the short course of her life. She was perfectly well and had developed normally until her ninth month, when an enterocolitis made her ill for ten days. This left her with constipation, for which enemas were employed. At thirteen months, while apparently in the best of health, she fell over and could not be made to stand again. Fever and drowsiness existed, but no vomiting or convulsions. A purge, milk diet,